

Economic Analysis

Houston South Project

May 10, 2019

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The analysis evaluates the cost efficiency associated with the proposed activities. Since fixed costs, such as general administration and program management, do not change among the alternatives, these costs are not included. Furthermore, costs included in the economic analysis are only those incurred by the Forest Service. Costs incurred by timber purchasers or other parties are not included. We used historical costs for similar projects on the Hoosier as estimates. The analysis considered all variable costs associated with each activity except those that have unknown quantities, such as wildfire suppression and law enforcement. Many values generated, both positive and negative, involve goods and services not priced in the market place. This comparison does not represent those values. These goods and services involve such things as the value of a hunting experience, a hike in the woods, wildlife viewing, or the water quality of streams and lakes. For purposes of this discussion, the only revenues considered are those with more finite estimates associated with timber production.

This type of analysis compares estimated Forest Service direct expenditures with estimated financial revenues (collected from the sale of forest products). This type of analysis helps determine whether the proposed activities represent a prudent means of achieving the resource objectives outlined in the *Forest Plan*. Assumptions were used in this process;

- Seventy percent of the proposed treatments will be completed. The project is proposed at the stand level and some areas in the stands are not suited for management. This will be determined during sale preparation and can be due to a variety of reasons such as steep slopes or riparian areas.
- Even-aged management (clearcuts and shelterwoods) will be maximized to the extent allowed by the Forest Plan in Management Area 2.8 (10 acre limit). Thus, a 30 acre pine stand proposed for clearcut would have two 10 acre clearcuts with thinning between them.
- Twenty percent of the selection harvests will be in groups with the remaining areas being single tree.
- A four percent discount rate was used in the analysis. This will allow the determination of present value of a series of future cash flows.
- All reports will be for 2018 which is the most current year that the gross domestic product is available.

We used *QuickSilver version 2.8* in the efficiency analysis of the Houston South Restoration Project to calculate the return on each dollar spent. *QuickSilver* calculated a relative figure of the Net Present Value (NPV) of the action alternative. The costs calculated by *QuickSilver* were road costs, prescribed burning, and reforestation activities. These projects represent the majority of the costs incurred during project implementation.

The benefits realized through timber harvests depend on market value and costs at the time of sale. Before any National Forest timber is sold, would be appraised to estimate the products' fair market value. A timber sale is offered competitively and the contract is normally awarded to the firm offering the highest bid. These requirements are in place to help ensure that the government is justly compensated for any timber sold. For this analysis, stumpage values used the base period prices effective in May, 2019 for the Hoosier National Forest. Prior to sale offer, these bas stumpage may be decreased to include stump to truck, transportation, logging overhead, and road construction costs. The Table below shows the results for the action alternative.

Description	Action Alternative
Present Value (cost)	-\$3,273,844.37
Present Value (benefit)	\$5,873,356.82
Present Net Value	\$2,599,512.45
Benefit Cost Ratio	1.79

This analysis includes the following

- Timber receipts
- Chemical site preparation
- Prescribed burning (1 burn)
- Aquatic Organism Passages